LISTing Newsletter

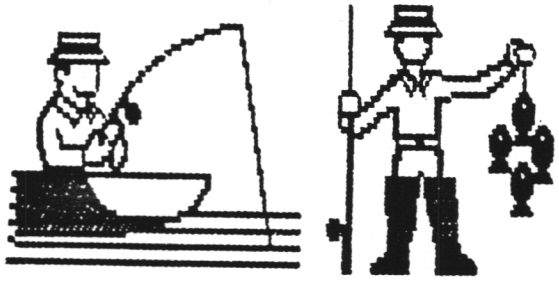
June 1994

Newsletter of the Long Island Sinclair/Timex Users Group

JUNE 1994						
SU	MO	TU	WE	TH	FR	SA
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	24
26	27	28	29	30		
LIST MEETING 12TH						

See You In September

Fred Stern



Listing Policy

Annual Dues $16.00

One "sample" copy sent upon receipt of Business size SASE. Copies provided on EXCHANGE BASIS with other bona fide user groups. LISTing is published monthly except July and August by LIST (Long Island Sinclair Timex) Group, a not for profit user group.

We are always looking for articles, programs, reviews etc. to keep our members informed and entertained. You maintain full credit and copyright.

Portions if this publication may be reproduced, without written consent. Please give credit to LIST when reprinting articles.

LIST disclaims any responsibility for any damage you may do to your computer as a result of reading any articles in LISTing.

LIST OFFICERS

PRES. HARVEY PAIT
V.P. BOB GILDER
TRES. ROBERT MALLOY
COR.SEC. JOHN PAZMINO
EDITOR. FRED STERN
LIBR. TOM SKAPINSKI

PLEASE SEND INQUIRIES TO:
LIST
MR. HARVEY PAIT
5 PERI LANE
VALLEY STREAM, N.Y. 11581

PLEASE SEND SUBMISSIONS TO:
LISTING
MR. FREDERIC STERN
P.O. BOX 264
HOLBROOK, N.Y. 11741

COMING EVENTS:

JUN. 12, 1984 LIST MEETING.

++SPECIAL NOTICE++

THE NEXT MEETING WILL BE HELD AT THE ICE CREAM DISPENSARY
CHARLES STORE
234 DOGWOOD AVENUE
FRANKLIN SQUARE, N.Y.
TEL 516-488-1060

DIRECTIONS: SOUTHERN STATE PKWY. TO EXIT 17 NORTH (HEMPSTEAD AVE) GO TO FIRST TRAFFIC LIGHT, LEFT TURN ON TO CORNWALL, NEXT TRAFFIC LIGHT BEAR RIGHT ON TO DOGWOOD AVENUE, GO 1 MILE TO THE ICE CREAM DISPENSARY, IN A SMALL SHOPPING CENTER ON THE LEFT SIDE OF THE ROAD.

MEETING MINUTES
REPORTED BY FRED STERN.
MAY 22, 1984

THE MEETING WAS CALLED TO ORDER BY HARVEY AT 8:00PM

IN THE MAIL WE RECEIVED 1 RENEWAL AND 1 CORRESPONDENT.

BOB GILDER REPORTED THAT THE MIRACLE QL SHOW IN RHODE ISLAND WAS A BIG SUCCESS. LIST WAS REPRESENTED BY BOB GILDER, BOB MALLOY, AND KEN LANG. BOB GILDER MADE A LIST FLYER FROM AN OLD ISSUE OF LISTING AND DISTRIBUTED IT AT THE SHOW.
THE NEXT QL SHOW IS TENTIVELY SCHEDULED FOR NEXT MAY IN DETROIT MICHIGAN. LISTING WILL PUBLISH MORE DETAILS AS WE RECEIVE THEM.

TOM SKAPINSKI WAS THIS MONTHS DOOR PRIZE WINNER. TOM WON A HARDDRIVE WITH INTERFACE. THIS IS WHAT YOU MISS WHEN YOU DO NOT ATTEND LIST MEETINGS.

CLASSIFIEDS:

THIS CLASSIFIED SECTION IS AVAILABLE TO ALL LIST MEMBERS FREE OF CHARGE.
THE ONLY RESTRICTION IS THAT IT IS TO BE USED ONLY FOR THE SEEKING, SELLING OR SWAPPING OF SINCLAIR, TIMEX OR MICROACE COMPUTER EQUIPMENT, PERIPHERALS AND SOFTWARE.
LISTING, LIST, AND ITS OFFICERS DO NOT ENDORSE, WARRANTY, OR GUARANTEE ANY OF THE ITEMS LISTED IN THIS CLASSIFIED SECTION

THE FOLLOWING PUBLICATIONS ARE AVAILABLE ONLY THROUGH LIST:

ZX-81/T81000 TECHNICAL TIDBITS
TECHNICAL TIDBITS PART II
SAVINGS AND LOAD OF THE TIMEX COMPUTER
$4.00 EACH.

FOR SALE, TIME, PRINTER PAPER, 3 ROLLS - $5.00+ POSTAGE.
CONTACT, FRED STERN 516-737-0963 EVENINGS AND WEEKENDS.

I AM LOOKING FOR AN AERCO DISK DRIVE INTERFACE FOR THE T81000. I WILL CONSIDER A PURCHASE EITHER WITH OR WITHOUT DRIVES. I WILL EVEN CONSIDER A U-REPAIR. FRED STERN 516-737-0963. EVENINGS AND WEEKENDS.

A FINAL WORD

MY NAME IS FRED STERN AND I AM THE EDITOR OF THIS EDITION OF LISTING.

THIS MONTH WE BRING YOU SOME NASTALGIC ARTICLES FROM ONE OF THE BEST SINCLAIR MAGAZINES FROM THE UNITED KINGDOM, SINCLAIR USER. SINCAIR USER MAY BE GONE, BUT THROUGH THIS NEWSLETTER IT WILL NOT BE FORGOTTEN.

THANK YOUS TO TOM SKAPINSKI, AND BOB GILDER FOR THERE HELP AND CONTRIBUTIONS TO THIS ISSUE.

A VERY SPECIAL THANK YOU TO HARVEY FOR HIS HOSPITALITY, AND THE USE OF HIS STORE FOR OUR MEETING. ALSO TO MIKEY FOR HIS CONTRIBUTIONS.

SEE YOU ALL AT THE NEXT MEETING.

QL CORNER

Well - The Miracle in Newport II show has come and gone, however, the memories of this show still linger on. List had four members representing LIST, Phil Florio, Ken Lang, Joe LaPunzina and yours truly. The trip from Massapequa, NY to Newport took approximately four hours and fifteen minutes. Phil and I arirved at the Howard Johnson Motor Lodge, the site for the show, at 10:15 AM.

The show was underway when we walked in. The room had tables around each of the four walls. Mechanical Affinity had approximately three or four tables chocked full of software and hardware at discounted prices and business appeared to be booming for them. Frank and Carol Davis and Paul Holmgren manned their tables.

Stuart Honeyball of Miracle Systems, Ltd, was busy taking orders for his Super Gold Card. Apparently, The first one hundred Super Gold Cards were sold immediately in the Europe. Stuart ordered more PC boards from his PC board supplier in the UK and he expected to assemble and ship at least 20 Super Gold Cards to Newport for sale. The PC board manufacturer could not produce the Super Gold Card boards for Miracle in time for the Newport show. I placed an order for a Super Gold Card and traded in an issue 3 Gold Card which brought down the price at £200.

The Super Gold Card manuals were available to those QL users who purchased a Gol
d
Card. The manual was produced by Bob Dyl for Miracle. It is spiral bound, containing 68, 8 1/2 x 11 inch pages, with a semi-hard cover. The contents of the manual is divided into two categories, Super Gold Card and Toolkit II. This is perhaps the nicest user manual I have ever received from any QL hardware or software supplier.

There were other QL users selling microdrive programs and old issues of QL World. The remaining tables were manned by QL notables, who would be demonstrating software and hardware. The New England QL users group was represented; Quanta was represented by Paul Holmgren and LIST represented by all four members in attendance.

During the afternoon, there were scheduled demonstrations of software and hardware by the following: Stuart Honeyball of Miracle Systems, Ltd demonstrated the Super Gold Card. A question of why the Super Gold Card had a parallel Interface on board when most users had a serial/parallel printer interface to do the job of printing. Stuart remarked that when printing graphics, the eight data lines from a true parallel port would process data much faster than a single line from a serial port. As for the speed of this amazing device, Stuart loaded in Quill, entered in lots of data and accessed the Copy command. Scrolling down the cursor didn't show any signs of individual line color change and within a split second, several pages were covered. Wow!, that was fast!!!

Bill Cable of New Hampshire demonstrated his newest database program. Others providing demonstrations were Tim Swenson with The Hackers Journal, Don Walterman and John Impellizzeri with Qbox-USA, Al Boehm of NESQLUG, Hugh Howie from Canada took photographs of the demonstrations and yours truly demonstrated the CL Systems Video Digitizer. I may have missed others and if I have, please forgive me.

Most of us began to pack up our belongings at approximately 5:30 PM and then head out to our motel to freshen up so that we could meet at the Newport Country Club for dinner at 7:30 PM. The restaurant was delightful and the food and drink were satisfying.

On Sunday morning at 09:00, quite a few of us gathered in room 215, at Motel 6 where coffee and donuts were available and plenty of technical information about present and future QL hardware. Phil and I took off for NY at 10:30.

Would I attend another QL gathering next year? The rumor was that a show will be held in Detroit next spring. At first I thought that Detroit was too far from NY to attend a show, however, after a few days of thinking about the great time I had in Newport; all those QL users I had met and talked with, have made me change my mind about attending a 1995 QL show in Detroit. If at all possible, I will see all of you in Detroit in '95.

Before signing off, I would like to add that every QL user in North America owes one individual lots of thanks for his foresight, dedication and determination by showing the rest of the world (IQLR Publication) that USA QL users are knowledgeable and serious about their QLs. And another round of applause for Bob Dyl for single handedly setting up the '93 Miracle in Newport QL show and also, this years QL show.

The Miracle in Newport II show provided me with faces of QL users that I have read about and heard about and I doubt that I will ever forget them. Thanks, Bob Dyl.

See you next month.....Bob Gilder

We had some space left so...

We ran a cartoon!!!

MARVIN

B. C.

Solitaire

Solitaire

HERE IS a version of **Solitaire** for the 16K ZX-81. The listing is very well done but so many checks are required for illegal moves that there is a lengthy pause between the display for each new position. See if you can condense it.

Line 1 contains the REM statement for the win routine. Enter it as listed, then type "POKE 16521, 126"; "POKE 16523, 118"; "POKE 16528, 119"; "POKE 16530, 120". LET and RETURN are listed by entering and deleting THEN.

Unfortunately we do not know how to win at Solitaire so we could not test the win routine. We have had to trust Mark Harper, of Swindon, Wiltshire, who sent the program.

```
   1 REM E£RND▪CHR$ ▪7? RETURN ?
C▪Y▪?"?▪COS / LET
   2 GOSUB 9000
   3 GOTO 1000
   6 SLOW
  10 PRINT AT 20,0;"MOVE FROM?
 ";
  15 INPUT F$
  17 IF F$="" THEN GOTO 15
  20 PRINT AT 20,9;" ";F$(1);",";F$(2);
  25 PRINT " TO?"
  30 INPUT T$
  32 IF T$="" THEN GOTO 30
  34 PRINT AT 20,16;" ";T$(1);",";T$(2)
  36 LET F=VAL F$(1)
  37 LET G=VAL F$(2)
  38 LET T=VAL T$(1)
  39 LET U=VAL T$(2)
  40 IF S(F,G)=-1 THEN GOTO 10
  50 IF S(T,U)=-1 THEN GOTO 10
  60 IF F=G AND T=U THEN GOTO 10
  70 IF VAL F$>77 OR VAL T$>77 OR VAL F$<11 OR VAL T$<11 THEN GOTO 10
  80 IF ABS (T-F)<>2 AND ABS (U-G)<>2 THEN GOTO 10
  85 IF F<>T AND G<>U THEN GOTO 10
  86 LET X$=STR$ ((VAL F$+VAL T$)/2)
  87 IF S(F,G)=0 THEN GOTO 10
  88 IF S(T,U)=1 THEN GOTO 10
  89 IF S(VAL X$(1),VAL X$(2))=0
 THEN GOTO 10
  90 FAST
  92 LET S(F,G)=0
 100 LET S(T,U)=1
 110 LET S(VAL X$(1),VAL X$(2))=0
 120 LET C=C+1
 127 IF C=32 AND S(4,4)=1 THEN GOTO 8000
1001 FAST
1002 CLS
1003 PRINT "  1 2 3 4 5 6 7"
1004 PRINT
1010 FOR A=1 TO 7
1020 PRINT A;" ";
1030 FOR B=1 TO 7
1040 IF S(A,B)=-1 THEN PRINT "
 ";
1050 IF S(A,B)=1 THEN PRINT "▪ "
;
1060 IF S(A,B)=0 THEN PRINT "X "
;
1065 IF B=7 THEN PRINT A;
1070 IF B=7 THEN PRINT
1080 IF B=7 THEN PRINT
1090 NEXT B
1100 NEXT A
1110 PRINT "  1 2 3 4 5 6 7"
1111 PRINT AT 18,16;"MOVES: ";C
1112 GOTO 6
8005 POKE 16527,0
8007 RAND USR 16514
8010 FOR X=1 TO 63
8020 POKE 16527,X
8030 RAND USR 16514
8040 NEXT X
8050 POKE 16527,0
8060 RAND USR 16514
8070 PRINT AT 0,0;
8080 PRINT AT 12,16;"CONGRATULATIONS"
8090 PRINT AT 21,17;"PRESS NEWLINE"
8100 INPUT N$
8110 CLS
8120 RUN
9001 FAST
9002 CLS
9005 LET C=0
9010 DIM S(7,7)
9020 FOR A=1 TO 7
9030 FOR B=1 TO 7
9040 IF A<>1 AND A<>2 AND A<>6 AND A<>7 THEN GOTO 9060
9045 IF B<>1 AND B<>2 AND B<>6 AND B<>7 THEN GOTO 9060
9050 LET S(A,B)=-1
9055 GOTO 9070
9060 LET S(A,B)=1
9070 NEXT B
9080 NEXT A
9090 LET S(4,4)=0
9100 PRINT AT 10,10;"INSTRUCTIONS? Y/N"
9110 INPUT Z$
9120 IF Z$="N" THEN RETURN
9135 SLOW
9140 CLS
9150 PRINT "▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪"
9160 PRINT "▪  THE OBJECT OF THE GAME IS ▪"
9170 PRINT "▪ TO REMOVE ALL THE PEGS ▪    ▪"
9180 PRINT "▪ EXCEPT THE LAST WHICH      ▪"
9190 PRINT "▪ MUST FINISH IN THE CENTRE  ▪"
9200 PRINT "▪ SPACE.                     ▪"
9210 PRINT "▪  SPACES ARE (X).           ▪"
9220 PRINT "▪  YOU TAKE PIECES BY HOPPING ▪"
9230 PRINT "▪OVER THEM INTO AN EMPTY SPACE▪"
9240 PRINT "▪BEYOND,REMOVING FROM PLAY THE▪"
9250 PRINT "▪ PIECE YOU HAVE HOPPED OVER. ▪"
9270 PRINT "▪   EACH MOVE MUST BEMADE IN A▪"
9280 PRINT "▪ STRAIGHT LINE.             ▪"
9310 PRINT "▪ THE COMPUTER WILL NOT      ▪"
9320 PRINT "▪  ACCEPT ILEGAL MOVES.      ▪"
9330 PRINT "▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪"
9340 PRINT AT 21,17;"PRESS NEWLINE"
9350 INPUT N$
9360 RETURN
9410 SAVE "SOLITAIRE"
9420 PRINT AT 10,10;"SOLITAIRE"
9430 FOR X=1 TO 100
9440 NEXT X
9450 CLS
9460 RUN
```

Secrets of the QL memory

The organisation of ROM and RAM provides an insight into the new machine's abilities. Eric Cowsill provides the answers

SINCLAIR has a winning combination — a new more powerful computer, a revolutionary operating system, a new dialect of Basic, and, most important, has taken away the drudgery of wading through a manual to try to discover how it works.

It seemed that the best plan would be to delve into the QL memory and find which addresses are used by the system and where the program area lies. A short program such as that shown in listing one is all that is needed to discover that the memory is divided between ROM and RAM, roughly as shown in figure one.

That program could, of course, be changed to given a more detailed look at key parts of the QL memory. Listing two shows a single Basic monitor program which evolved from the desire to do something useful while idling away the hours discovering the syntax of SuperBasic by trial and error.

The screen layout of the program will be the same, whether F1 or F2 is selected on power up. Line 90 alters the dimensions of the default output channel — channel one — so as to give the best display. Three options are provided from the menu display: an area of memory, alter an area of memory — placing the same value in each location, and quit to leave the program. The selection is made by pressing the key corresponding to the first letter of the required option. Notice the use of SELect to determine appropriate action.

If the 'display' option is chosen you will be asked to give the address from which you want the display to start. The PROCedure address will accept an input either in decimal or prefixed by '$', in hex. The procedure is not entirely mug-trapped but will eliminate the most likely causes of invalid inputs.

Listing 1

```
5 CLS
10 i=1024
20 FOR j= 0 TO 256
25 x=j*i
30 a=PEEK(x):POKE x,65
35 PRINT j;"K ";PEEK(x);" ";
40 POKE x,a
45 NEXT j
```

This routine provided an interesting exercise in discovering how the QL handles strings. In its turn, address calls up another procedure to evaluate the string as a number, which is then returned as a value in the variable i.

The next action is a call to the PROCedure display. That will show 24 rows, each displaying the contents of 16 memory locations. Those values are shown in hex. Where they correspond to a printable character that is also displayed.

The display of printable characters makes it a relatively easy task to find the keywords in ROM, the Basic program area and the RAM used for string storage, buffers and system variables.

When the display is complete, three options are available. 'Up arrow' will show the area of memory immediately preceding that displayed. Similarly, 'down arrow' will show the block of memory immediately following. 'L' returns to the main menu.

If 'Alter' is selected, three values are requested. They are the start and end addresses and the value to be placed in those locations. The area which has been altered is then displayed automatically as soon as 'Alter' has been executed.

Working systematically through the QL memory will reveal more about the machine but figure two will highlight the areas which are likely to prove of interest.

The other purpose in writing the program was to try to discover how some of the SuperBasic works. Four of the programming techniques used will be of particular interest.

The string-handling capabilities are very interesting but not yet fully-implemented. Some of the string-handling functions lead to error messages or even program crashes, although on another program RUN they may operate perfectly well. That serves to demonstrate the temporary and incomplete nature of the existing ROM. It seems that if string slicing is to be effected it is necessary to DIMension a string array. The DEFined PROCedure address demonstrates the use of string slicing operations to eliminate invalid inputs.

The use of DEFine PROCedure in place of the usual form of subroutine has the advantage that the routine can be called by name — whether from the main program or from another procedure — rather than by, e.g., 'GOSUB

Listing 2

```
10 REMark ************************
15 REMark BASIC MONITOR PROGRAM
20 REMark    FOR SINCLAIR  QL
25 REMark     Eric Cowsill
30 REMark    MAY  1984
35 REMark ************************
90 WINDOW#1,472,256,30,0
100 CSIZE 0,0:MODE 0
102 DIM hx$(6):DIM in$(10)
105 REPeat main
107  CLS#1
110  PRINT " BASIC MONITOR";
112  PRINT " PROGRAM"
120  PRINT:PRINT
130  PRINT "Select from:-"
140  PRINT "    Display"
145  PRINT "    Alter"
150  PRINT "    Quit"
155  REPeat kbd1
160   inp$=INKEY$
162   IF inp$<>"" THEN EXIT kbd1
165  END REPeat kbd1
170  inp=CODE(inp$)
180  IF inp >95 THEN inp=inp-32
190  SELect inp
200   ON inp = 68
201    CLS#1:PRINT
202    PRINT "Start address ?"
203    address 6:display
205   ON inp = 65:alter:display
210   ON inp = 81:EXIT main
230  END SELect
235 END REPeat main
240 STOP
1000 REMark ***********************
1010 DEFine PROCedure display
1015  REPeat show
1020   FOR j=i TO i+368 STEP 16
1030    x=j:dechex 5
1040    PRINT hx$(1 TO );"  ";
1050    FOR k=0 TO 7
1060     x=PEEK(j+k)
1065     dechex 2
1070     PRINT hx$(1 TO 2);" ";
1080    END FOR k
1085    PRINT "  ";
1090    FOR k=8 TO 15
1100     x=PEEK(j+k)
1105     dechex 2
1110     PRINT hx$(1 TO 2);" ";
1120    END FOR k
1125    PRINT"  ";
1130    FOR k=0 TO 15
1140     x=PEEK(j+k):ptchar x
1150    END FOR k
1160    PRINT
1170   END FOR j
1180   PRINT "up- preceding ";
1181   PRINT "block  down-next";
1182   PRINT " block   L-leave";
1183   PRINT " function"
1184   REPeat kbd2
1185    q$=INKEY$
1190    q=CODE(q$)
1195    IF q=108 THEN q=76
1200    SELect q
1210     ON q=208:i=i-384
1215      EXIT kbd2
1220     ON q=216:i=i+384
1225      EXIT kbd2
1230     ON q=76: EXIT show
1250    END SELect
1260   END REPeat kbd2
1280  END REPeat show
1290 END DEFine
1300 REMark ***********************
1310 DEFine PROCedure alter
1320  CLS:PRINT
1322  PRINT "Alter memory from?"
1324  address 6
1330  a1=i
1340  PRINT
1342  PRINT "End address?"
1344  address 6
1350  a2=i
1358  PRINT
1360  PRINT "Value to insert?"
1362  address 3
1370  val=i
1380  FOR a=a1 TO a2
1382   POKE a,val
1383  END FOR a
1385  i=a1
1390 END DEFine
1400 REMark ***********************
1410 DEFine PROCedure address (digit)
1415  PRINT "Enter address in ";
1420  PRINT"decimal or ";
1422  PRINT "prefix with '$'";
1425  PRINT " and enter in hex."
1426  NPUT in$
1427  l=LEN(in$):hd=0
1428  k=1
1429  REPeat lead
1430   IF l<=digit THEN EXIT lead
1431   IF k>digit THEN EXIT lead
1432   m=l+k-digit
1433   LET in$(k)=in$(m)
1434   k=k+1
1435  END REPeat lead
1436  in$=in$(1 TO 6)
1437  FOR k=1 TO LEN(in$)
1438   in=CODE(in$(k))
1439   IF in=36 THEN hd=1
1440   IF in>96 THEN in=in-32
1441   IF in>70 THEN in=48
1442   IF in<48 THEN in=48
1443   in$(k)=CHR$(in)
1444  END FOR k
1445  SELect hd
1446   ON hd = 0:eval
1447   ON hd = 1:hexdec
1450  END SELect
1460  REMark Digit specifies max
1462  REMark  length of in$
1490 END DEFine
1500 REMark ***********************
1510 DEFine PROCedure dechex (places)
1520  hx$=""
1530  FOR z=places-1 TO 0 STEP -1
1540   y=INT(x/16^z)
1550   x=x-y*16^z
1560   IF y>9 THEN y=y+7
1570   y=y+48
1580   hx$(places-z)=CHR$(y)
1590  END FOR z
1592 REMark Places specifies
1593 REMark  number of hex
1594 REMark  digits to be
1595 REMark   returned
1597 END DEFine
1600 REMark ********************
1610 DEFine PROCedure hexdec
1620  i=0
1630  j=LEN(in$)
1635  FOR k=j TO 1 STEP -1
1640   a=CODE(in$(k))
1650   IF a>57 THEN a=a-7
1660   a=a-48:i=i+a*16^(j-k)
1670  END FOR k
1690 END DEFine
1700 REMark ********************
1710 DEFine PROCedure eval
1720  i=0:j=LEN(in$)
1730  FOR k=j TO 1 STEP -1
1732   a=CODE(in$(k))
1734   IF a<48 OR a>57 THEN a=48
1740   i=i+(a-48)*10^(j-k)
1750  END FOR k
1760 END DEFine
1800 REMark ***********************
1810 DEFine PROCedure ptchar (x)
1830  IF x<32 THEN x=46
1840  IF x>128 THEN x=46
1850  PRINT CHR$(x);
1860 END DEFine
1870 REMark ***********************
```

continued from page 95

1000'. That means that the program to some extent is self-documenting provided names are chosen sensibly.

The procedure begins with DEFine PROCedure name and terminates with END DEFine instead of RETURN. The disadvantage of that simple structure is that because it can be called simply by name, SuperBasic will often fail to detect errors in entering keywords, assuming instead that a procedure is to be called.

Notice the way in which parameters — values — can be passed to, and for that matter from, PROCedures. The PROCedure address expects a value to be passed to it which will be the value of the variable digit — see line 1410. That value is passed when the PROCedure is called by placing the relevant value after the PROCedure name — see lines 1320, 1340 and so on.

REPeat name is used at the beginning of a program loop. Execution of the program will continue with the instruction following the REPeat instruction when END REPeat name is reached. That eliminates many occurrences of GOTO. For example, in line 235 of the monitor program END REPeat main could be replaced by GOTO 107. The program will break out of the loop when EXIT name is encountered — see line 210. The writer found that the REPeat name had to be on a line of its own, otherwise the program seemed to end in continuous loop.

SELect n introduces a powerful structure to enable multiple branches to be selected. The statement is followed by a number of conditions. A sequence of instructions may follow each condition but only if the condition is true will the instructions be executed. Execution of the program will then continue at the instruction following END SELect. Notice the mopping-up condition ON n — REMAINDER. The instructions following that condition will be executed if the value of the variable is not one for which an alternative course has been specified.

The SELect n structure corresponds in certain respects with IF . . . THEN . . . ELSE IF . . . THEN. It has, however, some advantages over this alternative. The sequence of instructions to be executed can continue on separate lines which again reduces the need for GOTO statements.

That structure is used several times in the monitor program, for example in lines 190 to 230. It appears to work only with a numeric variable and where the condition is expressed in the form ON n = n1 rather than ON n < n1 or ON n > n1.

Time, no doubt, will provide the answers as to how best to use the no doubt very powerful SuperBasic commands and structures.

● *Since the article was written the writer has received a copy of the QL manual. One or two minor amendments to the program have been incorporated but there are still no solutions to the string-handling problems referred to. It seems we will have to wait until the dongle in the cartridge port is replaced by the final version of the ROM.*

GLOSSARY

Basic — Beginners' All-purpose Symbolic Instruction Code. A programming language resembling English which is used by beginners because most popular microcomputers have it as standard.

Bug — an error in a program.

EPROM — Erasable Programmable Read-Only Memory. Semi-permanent storage. Information is not erased if the power is turned off in the computer. Programs can be erased by subjecting the memory chips to ultra-violet light. The memory can then be re-programmed using an electrical device called an EPROM blower.

Interface — RS232 and Centronics. A device which enables other computers or add-ons, such as printers, to be connected to the computer. It converts non-standard signals from add-ons to the standard signals of the computer in use.

Kilobyte — (K). A measurement of memory size. Most machines use 16K as a minimum but 48K is generally agreed to be necessary for serious work.

Machine code — an electronic pulse code used by the computer to perform functions and communicate with memory and other devices.

Mnemonics — abbreviated instructions — for example LD for Load — used in machine language programming.

Motherboard — an external printed circuit board which is used like a multi-way plug planner. It enables other printed circuit boards, such as graphics boards and colour boards, to be slotted-in.

Port — a link to the outside world which can be used by programs and the computer.

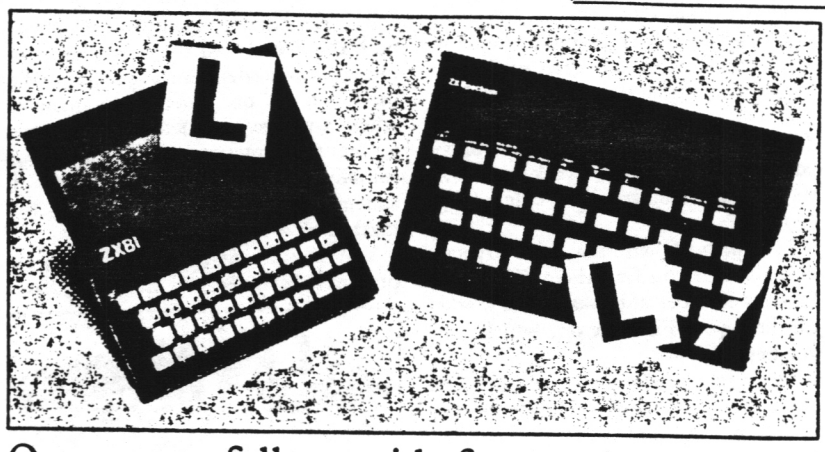
PCB — printed circuit board. A board which has on it the electronic circuits of the computer.

RAM — Random Access Memory. Information and programs can be stored in this type of memory as electronic pulses which conform to a set of numbers — machine language — in which programs are represented in the computer. When the power is turned off the information will be lost.

ROM — Read Only Memory. Information stored in this type of memory is not lost when the power is switched off.

Software — programs which control the operation of the computer.

Syntax error — a bug caused by incorrect use of a programming language.



Our easy-to-follow guide for new owners

The basic route to a habit-forming hobby

BUYING a Sinclair machine can be the start of a life-time's obsession with home computing. It is easy, however, to become discouraged if everything does not go according to plan from the beginning.

For those with only a little knowledge of computers and their capabilities, the best way to approach the machines is to abandon any ideas for special uses. While the 48K Spectrum is big enough for simple uses in small businesses, the range of Sinclair computers does not contain machines for major uses. It is better to become accustomed to the many facilities and then decide how you wish to use them.

Begin by unpacking your machine, overcoming your surprise at its size and weight and, following the manual, set up the system. If you cannot get the K on the screen, check that everything is plugged into its correct socket and re-set the machine by pulling-out the power plug for one second and try tuning-in again. If still nothing appears, check the power supply unit by shaking it. If it rattles, return it. If it is satisfactory, check your system with that of a friend.

If you have a Spectrum you will have received an introductory booklet which explains what the computer can do and giving detailed instructions on how to set it up. Also included is a fault-finding guide.

Once the K appears you are ready to begin learning about your machine. It can prevent family arguments if you can afford a separate television set for your system. It also makes life easier if you find somewhere to leave your equipment set up permanently. You will find that a few power sockets are needed and a four-way block connector on a short length of extension cable will help to tidy trailing leads.

When using a Spectrum, a television set has to be more finely-tuned than when using a ZX-81 because of the added dimension of colour. If the set is not tuned properly, the colours will look hazy instead of sharp and clear. If no colour can be seen when it is switched on, the power supply or the television set may be at fault.

Some users have experienced some difficulty with some television sets, which include Hitachi, Grundig and Toshiba. Sets which many people have found compatible include the Sony Trinitron, Fidelity and Ferguson. Recent changes in the ULA should make more sets compatible.

The manuals are written in great detail and are reasonably easy to follow. Some of the chapters may not seem immediately relevant but it is worthwhile reading them as you might miss something important.

Patience is needed at that stage to learn the ways in which the computer will accept information. It is tempting to try to enter programs before you are ready but that is likely to lead to errors. For example, words like AND, THEN and AT should not be typed-in letter by letter.

By the time you have reached chapter 11 in the ZX-81 manual and chapter 19 in the Spectrum manual you should have accumulated sufficient knowledge to be

continued from page 101

able to type-in other people's programs, such as those in *Sinclair User* and *Sinclair Programs*, without too much difficulty.

It is important when using the ZX-81 that it is not jolted. Some of the connections can easily work loose and everything which has been entered will be lost.

The manuals are not to everyone's liking and if you find them difficult to follow a number of books on the market can help you. Find the one which suits you best.

As a way of relaxing you can buy some of the growing range of commercially-produced software. That can be loaded directly from cassette but make sure that your machine is big enough to take the tapes you buy.

For the ZX-81 there are a few tapes for the unexpanded 1K machine but the majority require the 16K RAM pack. Similarly on the Spectrum most companies are taking advantage of the possibilities provided by the larger 48K machine rather than providing cassettes for the 16K.

The tapes can vary in quality and it is advisable to read the reviews in *Sinclair User* and use your judgment to find the best.

An alternative method to learn about both the ZX-81 and the Spectrum is to plunge in at the deep end and see what the machines will do. Refer to the manuals when you have difficulties. You can ignore the functions and calculations initially and experiment with PRINT statements to obtain the feel of the machines.

You may already have heard about the problem involved in SAVEing and

LOADing your own cassettes. The manual gives detailed instructions but many of the early ZX-81s would not accept tapes from some recorders. That problem is said to have been overcome but there can still be difficulties.

Usually they occur when LOADing tapes recorded by other people. One simple method to overcome this is to wind the tape to the middle of the program and type LOAD "" followed by NEWLINE; then increase the volume of the recorder slowly with the tape running until the television screen shows four or five thick black bands. If you then rewind the tape, the program should LOAD normally.

LOADing and SAVEing on the Spectrum is much easier and faster than the ZX-81. One difference is that when SAVEing on the Spectrum the LOAD lead must be disconnected either at the recorder or the Spectrum.

Finally, a health warning. Apart from any practical uses, computing with your Sinclair machine can be a very entertaining hobby and is almost certainly habit-forming. You may easily find yourself crouched over your machine, red-eyed, in the early hours of the morning thinking that in another five minutes you will solve the problem. Try to break that habit by getting into the fresh air and meeting other Sinclair users.

By obtaining a Sinclair computer you find that you have joined a not very exclusive club with many thousands of members, many of whom would be only too happy to advise you if you have difficulties.

Make sure of your regular copies of *Sinclair User* and *Sinclair Programs* and you can be guaranteed many happy hours.

MATHS TEST

SHARPEN your mental arithmetic with **Maths Test** for the 1K ZX-81 by David Steel of Beith, Ayrshire. The program will ask you to do a number of sums, telling you the correct answer if you are wrong.

The graphics at lines 50 and 60 print a large question mark on the screen. Notice also that at line 100 the random numbers chosen by the computer for the sums must be printed as whole numbers by using the INT function. If you want to change the sums to subtraction or other operations, change the plus sign in lines 100 and 105 to the appropriate symbol.

```
  10 CLS
  50 PRINT AT 4,20;"▄▄ ";AT 5,19;
" ▌ ▐";AT 6,21;"▝▘"
  60 PRINT AT 7,20;" ▌";AT 8,20;"
▌";AT 9,20;" ▘"
  80 PRINT AT 4,1;"QUESTION:  "
  90 LET A=RND*375
  91 LET B=RND*159
 100 PRINT AT 20,0;INT A;"+";INT
B
 105 LET D=INT A+INT B
 110 FOR F=1 TO 250
 111 IF INKEY$<>"" THEN GOTO 200
 112 NEXT F
 130 PRINT AT 15,10;"TIME UP"
 140 GOTO 222
 200 PRINT AT 20,0;"          "
 205 INPUT A
 210 IF A=D THEN PRINT AT 15,10;
"CORRECT"
 220 IF A<>D THEN PRINT AT 15,10
;"TWIT,WRONG"
 222 PRINT AT 20,20;"ANSWER=";D
 225 PAUSE 300
 230 GOTO 1
```